THE
TRAINING SCHOOL BULLETIN

DECEMBER, 1931

Research in Public Welfare[1]

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Some of you who visit Vineland from time to time have heard Professor Johnstone lead the children in an old negro spiritual whose refrain runs: "Everybody talks about Heaven ain't a-goin' dere." I want to say to you, as the head of a welfare department, that "everyone who talks about research ain't doin' it." When I think about research as we know it here in this institution, and try to think of illustrations of activities in the field of real scientific knowledge and its application to our human problems, I am impressed with the void that faces us and the fact that we are inclined to claim a lot more than we achieve.

While we do have institutions that possess the possibility of use as human laboratories, and while we do in some few instances really utilize the material of these institutions as human laboratories, those instances are all too few.

Looking back over the history of institutions in this state, this institution was the first school in New Jersey for the care and training of mentally deficient children. Of course, it was not started as a human laboratory, nor was it started as anything but a philanthropic, charitable endeavor to give care and protection and guidance to the children who needed it. Then came the leadership of Professor Johnstone, with his insight and vision as to what could be done to promote understanding of the problem, and then came the securing of Dr. Goddard and the development of the laboratory methods. But this School has existed always, not as an experimental station, but with the Laboratory as an accompaniment, to make the lives of the child-

[1] Presented at the Twenty-fifth Anniversary of the Vineland Laboratory, Vineland, September 4, 1931.

ren richer and fuller and better, and to give us some understanding of the causes back of the problem and some further understanding as to the direction that future training should take.

The work done here has not been paralleled in any degree, so far as I know, in other public institutions for mental defectives in this country. We have had one or two outstanding efforts to develop bureaus of juvenile research in our courts. Dr. Goddard left here to organize a Bureau of Juvenile Research under state auspices, in Ohio, and others are now carrying this project forward. At Mooseheart, Roselle and Reymert are trying to utilize the materials of that institution and the great resources that are back of them as a real opportunity for laboratory methods. But public institutions, generally, either have not had the vision of what could be done or have not been able to "sell" their vision and ideal and purposes to the people who supply the money. When it has been attempted, too often the character and calibre of the personnel has not been of the right sort or the environment has not been suitable for the best interests of this kind of program.

I have seen some progress in New Jersey in the last few years, particularly in the work of Dr. Henry A. Cotton, of Trenton, in efforts to get under the surface, to develop new methods for the study of mental disease and to apply those methods. No one who has not been close to that kind of problem knows what difficulties attend it. People who should have been patient and understanding, and who should have withheld hasty judgments have not done so. More is gained by speaking rather plainly and frankly about the limitations of it than by trying to make extravagant claims which cannot be substantiated.

As I see the possibilities for development of research in public institutions, it seems that such research should be clothed with some of the isolation that is given to university faculties. One of the real reasons why it has been possible here to develop this Laboratory is that the institution has been under private control. I do not believe that Dr. Goddard would have been given the opportunity or that Professor Johnstone could have done with public funds what they did with private support.

The experience here in this Laboratory indicates to some extent the kind of administrative control and program that will have to be set up if we are to succeed. One or two states have

spent millions of dollars for buildings, and have obtained competent personnel for investigational purposes, but I do not believe that any of them have been able to give the kind of "aura" to their situation that makes for the most hopeful sort of investigation. I think that the work has to be linked more directly to university auspices if we want the kind of men who will be given complete freedom. The scientific worker must be fully protected, particularly the man who is going to be called upon to venture into fields that are as difficult to approach as are these fields of human conduct and behavior.

I could well appreciate why it was that Professor Johnstone and Dr. Goddard were so apprehensive that they took more than six months to find the right field worker to contact the families of these children. That is a constant problem in public work. The families themselves and their friends are so apprehensive about the questions asked them and understand so little the ultimate objectives of the research men that it would take but the slightest tactlessness on the part of the field worker to upset a very good program. When we came to revive the investigations made by Miss Kite a few years ago, we went back to her to continue the work, because we knew we had to have someone who could be trusted to go to these people and produce the information needed without arousing family antagonism.

A research program requires time above all things. It requires a personnel that is thoroughly grounded in scientific method and point of view. But the research man, no matter how well grounded and trained, can do very little in a public or semi-public position without the protection of an administrator who understands his methods and limitations. I see that all the time in our relations with the Laboratory.

The State, it seems to me, has an opportunity which it has not used to the greatest possible degree to supplement and assist a laboratory such as this. We made some progress in the last year or two in freeing Dr. Cotton from his administrative duties, for research in his own laboratory as to the causes of insanity. That was the greatest single step that the State Department has yet made, I think, in the history of our welfare institutions. We have given him complete freedom in his laboratory, asking only for periodic reports to his associates. There have been no limits of time upon him to hamper him in any way.

We have had exemplified in the history of this Laboratory some of these essentials. In the first place, we had an institution whose Board of Trustees and whose Director saw the possibilities that lay in the use of the scientific personnel. We had a Board of Directors who saw that in proportion, with a sense of balance that won sufficient public support and particularly the support, over a long period of years, of an understanding philanthropist. Most of all, we had here a spirit of faith in the adventure itself and a real courage to launch out and try something new. The thing which has distinguished this Laboratory from others has been the everlasting effort to "do something about it;" not to rest content with what we know or to be satisfied that the plant is in good condition and that the staff are fairly well satisfied with their lot and that a sufficient number of children come to the School.

This School is always seeking to extend the borders of knowledge about the problem itself. It is always making contacts with other agencies, outside of itself. This School was directly responsible for every public institution now existing that serves the feeble-minded group in this State. From this School grew the New Lisbon Colony, the Vineland State School across the street, the Woodbine endeavor, and the gift of that property to the State. Also from this School grew the conception of what could be done through the training group at Totowa. We owe a great deal to the helpfulness of Mrs. Nash and her group in assisting us in the training work at Totowa.

This School has kept alive, with a lively sense of interest, an attack on current problems in the other institutions of the State. The Village for Epileptics at Skillman owes much to the conception of the classification of that special type. The whole classification program of our correctional system, which has received such favorable comment, owes its methods and techniques to the Children's Committee of this institution. The public institutions of New Jersey follow back a line of contact and intelligent direction and stimulation right to this room, and to the people who are gathered here.

We know that this Laboratory could not have made anything like the progress it has made in the School or in the State or in the nation, or internationally, had it not been for its own point of view toward the other agencies of the School. If it

had had to "go it alone," it would not have been successful. But the Laboratory went out with the right attitude to meet the other departments of the institution. Every department was brought into a happy relationship with the Laboratory, and it was that which gave us the first steps in the development of the psychological studies of these children.

It was that same spirit that took the Laboratory and School out into contact with the public school system and gave to New Jersey its state law providing for special classes. That same spirit moved the Laboratory and the School Department of The Training School to continue with the training of special class teachers and laboratory assistants and social workers.

When I was studying under Giddings, at Columbia, "The Kallikak Family" had just come out, and Giddings was enthusiastic about the possibility of other studies of that type, and called to the attention of his students the possibility of studying heredity and its influence on our problems.

The contacts of the Vineland Laboratory with the public school system and university students are contacts valuable beyond measure. Educators know what it means to them and their work, and are happy to pay homage to the contributions of this Laboratory. It is like an ever-growing accumulation of evidence.

When you started this you did not see the end, and you still cannot see the end. We are gathered here to pay a real word of recognition to the inspiration and to the achievement and particularly to the indications to the rest of us of what can be done when a happy combination, such as is found in Vineland and Johnstone and Goddard, comes together. I would like to see an arrangement worked out so that New Jersey could again look forward to having Goddard here in association with Doll and Johnstone and the rest of us in this work.

I never knew a person who was more constructive in his appraisal and criticism than Dr. Edgar A. Doll. He never accepted a thing because it was. He had to know all about it and why it was not better and what you were going to do about it to make it better. Still, I think we must admit that if it were not for some of these inquiring scientists it would be too easy for us to think things are all right as they are, and to go to sleep on our jobs. The public looks to us for something more than that.

I do not believe the statistical method is the way to give the public an understanding of our problems. That is where we need minds such as Goddard's. We need a man who not only has an understanding of the problems, but who can interpret them back to the families and in the legislative halls. When Dr. Goddard invented the word "moron" he gave an understanding of this problem that no one can ever really appraise. It was his ability to see and to interpret the problem of the feeble-minded in an understanding way that has made this contribution of extraordinary value. Someone else might have done the work with the Binet tests, but I do not think anyone but a Goddard could have done it in just the way that he did it. He not only applied the tests and reported upon them, but he interpreted them and made their application so real that in this field of work we are all doing business on the capital that he invested in the years from 1906 to the present time.

Dr. Goddard, we are here to pay to you a part of our debt of appreciation, not only of your scientific skills and abilities, but also for that quality which makes Tim come and shake hands with you and makes the children know that you are not only a scientist but a friend. We know that in this kind of work the only real progress is made when we have not only science but also understanding. That makes the man a Humanitarian.

Experimental Studies of Idiot Behavior[1]

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During the past four years, a number of experimental studies of idiots have been in progress at the Vineland Laboratory, with the object of investigating two promising possibilities for research. The first of these possibilities is based upon the generally accepted fact that the study of the feeble-minded has contributed to normal child psychology. In the slowly developing feeble-minded child have been observed those processes of growth and learning which occur so rapidly among normal children that such observation is difficult or impossible. Therefore, we considered it logical to suppose that a study of idiots, the most slowly developing feeble-minded children, would likewise make a contribution to the study of the feeble-minded in general.

The second possibility was to investigate experimentally, as an immediate practical problem, the trainability of idiots. A great deal of effort has been expended on the imbecile and moron grades of feeble-mindedness, with the purpose of making them contributing members of institution groups, or, in late years, of preparing them to take their places in society. The idiot, on the other hand, has until recently been accepted as a custodial burden with whom training was a total loss. It is now no more illogical to think of the idiot as a contributing member of the institution than it is to think of the moron as a self-sustaining member of society.

The only studies previously made of idiots have been of an exploratory nature and, without exception, have suggested unsuspected capabilities. These same capabilities are concretely demonstrated by the rug making of low-grade feeble-minded at Letchworth Village, New York, and the handwork at Woodbine, New Jersey. In spite of these indications, experimental studies

1 An address read before the American Association for the Study of the Feeble-Minded, New York City, May, 1931, and printed in the Proceedings of that Association. This report is a summary of a series of experimental studies in the adaptive behavior of idiots conducted at The Training School at Vineland, under two financial grants from the Elmhirst Fund.

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of training possibilities among idiots have been practically ignored. It was, therefore, for the purpose of learning more about the feeble-minded in general and the training of idiots in particular that we began the experimental studies reported in this paper.

The subjects were ten low-grade feeble-minded children, ranging in life age from 7 to 12 years and in mental age from 1.5 to 3.3 years. The studies made of these subjects are developed along three main lines: (1) adaptive behavior as measured by problem-solving methods among idiots; (2) intellectual development as indicated by the comparative genetic status of idiots and preschool children; and (3) sensory discrimination as revealed by the method of simple conditioning.

Problem-Solving

In our first study we employed a technique designed to bring out those capabilities in idiot children, which had not been found and developed or by any means of training in their routine environment. This technique is known as problem-solving, and has been used in experimental situations with apes and preschool children. It has not previously been used with idiots, so far as we can ascertain.

The first problems of this series involved box-stacking as a means of obtaining a lure. The child was brought to the room by the experimenter, who then remained outside, observing the child's behavior through a one-way-vision screen. The lure was suspended from the ceiling, at a height proportionate to the number of boxes to be used and the height of the child. The problems increased in difficulty until they were beyond the range of the child's ability to solve them. The circumstances which accompanied success or failure were carefully recorded.

The second group of problems of this series involved the use of implements. These problems were likewise arranged in order of complexity. The lure was placed in a pen six feet square, made of palings four feet high. The implements were sticks which could be used either singly or combined, according to the problem.

The solutions of the problems both with boxes and sticks depended upon self-initiated activity. There were no verbal directions and no adults or other children to depend upon for

cues or encouragement. The child was in the room alone, and success in the problem could only be expected when there was sufficient incentive value in the lure to bring about a spontaneous response in the child's behavior. This fact led to experimentation with the lure itself as a means of studying the effect of incentive on the individual performances.

The first lure was a ball, which in no case failed to attract the child's attention and bring about at least a reaching response, the most primitive form of adaptive behavior in such situations. Then a ball and cookie were presented, and finally a banana.

As judged by the amount of activity induced in the subjects and the number of successful responses, the ball, although an eagerly accepted toy, held less incentive value than the cookie, while the banana surpassed either of these. Tommy, for example, piled two boxes together for the ball and cookie, but absolutely ignored the third box. However, when a banana was substituted as the lure he immediately stacked three boxes together. Such an observation leads to the speculation that ability cannot be determined until stimulation is maximal.

Billy was obviously afraid of standing on three boxes after he had stacked them together. He attempted it several times when the ball was suspended above his head, and each time gave up. When the banana was used, however, he immediately stood on the same three-box structure, displaying no overt fear reactions. Incentive in this observation seemed definitely associated with the elimination of an emotional obstacle to success.

Many responses in the situations revealed personality differences of much importance. For example, when the child was taken to the room and the door shut between him and the experimenter, there were many kinds of reactions. One child cried at being left alone, and he continued to do so until it was necessary to take him from the room. Others whimpered when their attempts failed, and still others showed evidence of discontent and anger under such circumstances by stamping or banging on the door with their fists. However, the latter displays accompanied failure and not mere discontent at being alone.

The reactions of the children during the momentary presence of the experimenter at the beginning and end of the trial also suggested personality differences.

For example, Sammy began his solution of the problem the minute the door was opened for him. Carl waited until the door was closed, with the experimenter outside, while Jimmy waited until the end of the trial period, when the experimenter had re-entered the room, before beginning any activity toward the ball, and then looked constantly for approval and assurance.

These personality differences, displayed according to the presence or absence of the observer, suggest important considerations with respect to adult presence and attention in a training program.

Obviously, we must treat every child individually, encouraging those who respond best to encouragement and isolating those who develop best in self-initiated activities.

Distractibility was sometimes prevalent and in some cases associated with failure. George, who has very low intelligence and meagre adaptability, was hyperactive upon seeing the ball, and reached for it repeatedly. But he did not use the boxes at all until the experimenter placed them directly under the ball. George then became engrossed in climbing up and down, and completely ignored the ball. In this case the solution itself was a distraction in obtaining the end result.

Binet mental age within the limits of the group was not a good measure of a child's ability to solve these problems. The three who failed the simplest problems were of the lowest mental ages. However, the seven subjects who ranged in mental age from two to three years did not seem to be sufficiently differentiated by the tests to account for their varied ability in these situations.

These and similar observations of the idiot's activity in problem situations at the borderline of his ability suggested incentive, emotional make-up and individual personality reactions as well as mental age as influential factors in idiot behavior and trainability.

Genetic Mental Status

The second study, which was a comparison of the developmental status of idiots with that of preschool children, was made on the basis of genetic age scales. Twelve low-grade feeble-minded children, ranging in Binet mental age from 19 to 38 months, and twelve preschool children ranging in life age

from 19 to 38 months, were examined by means of three developmental schedules, the Kuhlmann-Binet, the Gesell, and the Merrill-Palmer series, before the latter's combination into a single scale.

Analysis of these test results revealed a marked deficiency in language among the idiot children as compared with normal children of approximately the same mental age. They also showed a wider range of development and more unevenness than do normal children. In other words, it is more difficult to get a cross-section of the idiot's development than that of the normal child because of the uneven performance of the idiot, who displays an 18-month level in some respects and a 48-month level in other respects.

In manual tasks the idiot group excelled the normal group, especially where these tasks were related to self-help. They also displayed a greater independence, although no marked differences were displayed in judgment and sensory discrimination.

The two groups were also compared with respect to physical development. The normal group were all of average or superior physique for their life ages, while the idiot group showed an average physical retardation of two years. In spite of this retardation, however, the idiot group still revealed a physical development five years superior to that of normal preschool children of equal mental age. This physical superiority in itself gives the idiot an advantage over the normal preschool child from the standpoint of capabilities in training and experimentation.

In planning this study we hoped to determine whether the idiot was mentally at the infant level and could be accurately compared with the normal child as to degree of mental development. It is, of course, difficult to determine the extent to which physical and emotional development may account for the obvious differences between the infant and the idiot. However, considering mental development alone, or as nearly isolated as possible, we find certain constant differences in development which separate the two groups. Adding physical development to these differences, we separate the two groups even more extensively, and in a way that favors the idiot group from a training point of view.

Conditioned Responses

The third study was designed for the purpose of establishing a method of simple conditioning among idiots. Although many books on Child training emphasize the importance of early conditioning, there is so far no adequate method for an accurate experimental study of this process. We proposed to establish a method of conditioning based upon sensory discrimination, thereby serving a double purpose; first, a means of investigating factors influencing learning; and second, a study of discriminatory ability.

Since language and language comprehension were found to be the idiot's greatest weaknesses, and since food was found to be a successful substitute as an incentive for activity, it appeared logical that we could establish a preference for one of two boxes with a single variable by association with food. The building up of this association is a conditioning process or learning and the individual differences and other factors accompanying such a process should contribute to an understanding of learning at this elementary level. If, then, the difference between the two boxes is decreased until the correct choice is no longer made, we will have an estimate of the subject's discriminatory ability under the existing circumstances. If the incentive is maximal it should be possible to determine the limen of discriminatory ability.

As in the problem-solving studies, the observer was stationed in an observation room equipped with a one-way-vision screen. The two boxes were identical in every respect except size. They were placed on a table, across the end of the room opposite the door. The subject was allowed only one choice during each trial, and given five trials per day. Eighteen out of twenty trials was taken as the criterion of successful conditioning.

This study, like the problem-solving study, depended upon self-initiated activity. There were no verbal instructions; the child was merely admitted to the room and remained there until he had raised one box. The first trials took from one to ten minutes, although thereafter five seconds were often sufficient.

Reconditioning to the opposite box, after completion of the first conditioning, revealed facts about the relation between building up a conditioned preference and breaking it down.

There was a tendency among the subjects to show a reverse correlation between the two problems. In other words, those who learned most readily took longest to inhibit the response learned.

Among those who learned the problems there were marked individual differences, which revealed only a negligible correlation with mental age within the limits of the group. Only seven of the ten learned the problem in the original set-up. The three who failed, although in the lower half of the group with respect to mental age, were not the lowest, and the child with the highest mental age took the greatest number of trials among those who learned. The remaining six showed some correlation with mental age but the above exceptions in a group of this size are indicative of other influential factors.

Before establishing the correct choice, every child revealed a position preference, choosing always on the left or always on the right for at least one day.

Personality differences were also readily observed during the process of conditioning. Almost every child expressed delight, either by exclamation, smile, or manifestations of excitement, upon a successful trial. Failure, on the other hand, affected them quite differently. One child stamped his foot and scratched his head; another simply said "No cookie;" a third seemed indifferent; and a fourth became very obstreperous among his companions, kicking and pushing them upon leaving the room. After a day or so of consistent failure this boy refused to come to the room at all. In these cases he was brought to the room and allowed to make two choices, thereby assuring success in this trial. One success of this kind was followed by willingness to come to the room for several trials, whereupon if there was no spontaneous success the forced success had to be repeated.

It seemed interesting to speculate as to whether the child was discriminating on the basis of absolute memory or was making actual comparative choices. This was determined experimentally by presenting a second pair of boxes of the same relative difference but with the smaller box of the former pair equal to the larger box of the new pair. Every subject chose the smaller box of the new pair rather than the actual box to which they had been conditioned. In other words, the idiot selects objects by their relation to other objects in

the environment. This same experimental fact carries over to colors and grays, which means, for example, that a child may learn to prefer green when seen with red, but may not carry this over to a preference for green when seen with other colors.

The discriminatory ability was determined after the conditioning problems had been completed. The seven subjects thus tested varied in discrimination from the ability to select a difference of one-sixth to a difference of one-twenty-fourth in the size of the boxes, and the variations seemed partially correlated with mental age.

The suggestions for controlled learning studies imparted by this conditioning experiment are unlimited. We can observe a type of spontaneous learning in sharp contrast to the adaptive behavior called for in problem solving. In the latter the child worked out his solution step by step, making adaptive associations in a logical sequence. In the conditioning studies the first few trials are essentially exploratory. The child must eliminate certain responses such as random choice, choice by position, alternation and others which may occur during the learning process. The former two were common to every case, while other not so obvious responses must have occured. The hesitancy and visual fixation, first on one box, then the other, as learning was taking place, indicated that the subjects were aware of a problem and that the response was, therefore not mechanical. An investigation of the extent to which these problems may be complicated and variables increased is a possible trend such a study may take. This would lead to another form of problem solving, involving rational selection and memory.

In the field of sensory discrimination there are also many possibilities. Problems in brightness discrimination followed size, and one child, who was particularly promising, was given boxes varying both in size and brightness, to discriminate first on the basis of size and then reconditioned to brightness. The possibilities of such problems are almost inexhaustible and might be taken through form, color and number in visual discrimination as well as sounds, tones and temporal sequence in auditory discrimination.

The results thus far not only indicate without doubt the feasibility of determining sensory equipment by this method, but make possible a study of learning processes, and an analysis

of personality differences as well as the most effective methods of facilitation and inhibition in training. They also suggest a means of objectively measuring the children's capabilities under highly stimulated conditions which should help to avoid futile attempts to teach tasks beyond the child's abilities and at the same time encourage the training of such abilities as he has demonstrated.

These studies of idiocy thus far are of a preliminary nature, investigating the possibilities for research and suggesting methods in a hitherto neglected field. The implications for further study in the field are almost unlimited. The adaptive behavior study gave us some indications as to the extent of initiative and resourcefulness in learning. That study also reveals personality differences among idiots, the effect of these differences on adaptive behavior, and other factors, especially incentive which modify the response. The genetic study revealed a specific disability in language and language comprehension among idiots as compared with normal preschool children, a relative superiority in manipulative skill and a general uneveness of development. The study of conditing presents a method of studying the factors of facilitation and inhibition in learning as well as a method of investigating sensory equipment.

Both the adaptive behavior and conditioning methods reveal a spontaneity of response which depends not upon verbal stimulation, but upon the incentive value of a food lure. This principle in itself is probably the greatest contribution of the studies, and offers suggestive principles for training as well as further study in the field of idiocy.

Christmas at the Training School

Edna Jatho Byers

How often as a "Summer Teacher," and later as a frequent visitor have I heard the children tell with sparkling eyes about the glories of CHRISTMAS AT THE TRAINING SCHOOL. And now it is my good fortune to be right here in the midst of it all.

I saw the Christmas Store in all its glory on the very first day after Thanksgiving which is really the beginning of the enchantment. Rows upon rows of gifts to be selected by the children and sent home to families and friends. Many of the glittering things have been made in school—toys, woolen bags and scarfs, funny little dollies and animals made of inner tubes (think of that!), and others made of wash cloths and stockings. Then the dollies dressed by the girls, and the charming linens made by their skillful hands into things of beauty. Baskets and trays, fascinating things out of oil cloth in resplendent colors are spread out on the shelves and counters for the delighted and confused eyes of the children.

They must select what their treasuries can afford, treasuries made up in many cases only of the store credits, earned by good "O.K. Slips" sometimes saved for a year. You, my readers, with well filled purses, who tackle your Christmas shopping at John Wanamaker's, cannot by any magic so infuse your very souls into your gifts as these children do. Many of them come to the Christmas Store after a year of planning and saving, their good conduct being their only purchasing power.

Of course there is the excitement surrounding the places where the out-going packages are piling up. The front office where they are stacked until only a very slender person may be sure of squeezing through the narrow aisles, aisles made by walls of parcels containing the precious gifts of these children for their loved ones on the "Outside." More thrilling still are the incoming packages, for they are already coming over right into the cottages and being secretly whisked into the "Gift Room" where they must remain until the magic morn of Christmas.

School is alive with Christmas Play plans and enthusiasm. Costumes are being fitted and roles becoming more realistic as the efficiency of the players increase, only after the maze of infinite repetitions and rehearsals. Dancers and those who will drill, find that their music has complete possession of their feet and so they skip about their work. Snatches of the new songs come humming from the throats of the "Casts," teasing us all to ask questions, which they will mysteriously refuse to answer, their manner growing more superior every day. There is our Joe who says, "Gee! I've come down in the world I have. Last year, a King I was—this year I'm a frog." Today, ten days be-

fore Christmas, we began to sing carols in school and right sweetly the childish voices fill the halls with the joyous songs of old, their appeal ever new whenever heard, but doubly so to me this year since I am spending my first CHRISTMAS AT THE TRAINING SCHOOL.

Second only to the Play is the enthusiasm about "Christmas Eve Night," as the children call it. They will meet in Garrison Hall and have general fun, Prof. Johnstone leading it all—singing carols, unveiling the big tree, talking of the joys of the morrow. There is always the beloved farce of trying to get Santa Claus on the telephone, having bad news of false import, and the final glorious success in getting in touch with him so that soon he arrives upon our very sight. Confusion and joy there will be, but all to close with the sudden quiet we know so well, and the "Good Night Song." No prayer of the mightiest eloquence can be greater than this song on the lips of our children. I know that the hush of the old world centuries ago as it waited under the Star for the Holy Babe to be born, was not more peacefully expectant of a miracle than the hearts of our children as they go happily to their cottages.

Who will hold it against them, if there is mixed with the ecstasy of their expectations, the sure knowledge that the morrow will bring the greatest feast of the year, with turkey for all with plenty of time to eat and be merry. What a feast of food and beauty it will be, for every one from Prof. Johnstone right on down, will be dressed in their "Best."

Oh, we are all children again in this land of eternal childhood—this enchanted land of CHRISTMAS AT THE TRAINING SCHOOL, where every Santa Claus letter has been taken seriously by someone of the old Saint's deputies, the employes who work out this Christmas dream for the children. Tired backs and weary feet will have to put off their aching until after the joyous day is safely over, and CHRISTMAS AT THE TRAINING SCHOOL has slipped into the beloved past, over which we will all brood dreamily until another year shall bring the glow to hearts again, and we shall do it all once more.

Menantico Colony

Frank G. Merithew

Annual Report

Stock

This has been a wonderful year at the Colony. During the entire year there has been a steady growth in every direction. In January, the dairy herd was brought from The Training School to the Colony. This swelled our herd to a total of 104 head of cattle.

Since the transfer, there has been an increase in milk production, with a gain of more than five pounds per cow per day. We are giving constant attention to this phase of the dairy work, and expect, within the next year, to better the present monthly average considerably. If this is accomplished, it is obvious that we will be able, in the near future, to produce the same amount of milk with fewer cattle. We have acquired several additional cows, one of which, we are informed, ranks ninth in the nation in milk production.

We now have more than 300 hogs. These are fine animals, and we have sold a number for show purposes. The most modern methods are being used in their care. At present, Professor William Skelley, of New Brunswick, is conducting an experiment whereby iodine is fed to the sow before and after farrowing, the object being to produce a stronger and healthier pig.

Crops

Despite the mid-summer drought, our crops were exceptionally good, the principal yields being as follows: alfalfa, 55 tons; Sudan and Soy beans, 23 tons; oat hay, 7 tons; ensilage corn, 400 tons; early potatoes, 2206 baskets; late potatoes, 1248 baskets; seed potatoes, 232 baskets; sweet potatoes, 5800 hampers.

In view of the fact that we had only 15 acres of sweet potatoes, we feel that this yield was especially good. Our sweet potatoes were exhibited at the State Horticultural Show, held

in Atlantic City recently, and we are planning to exhibit them also at Trenton during Agricultural Week, January 26 to 29.

Buildings and Equipment

The heating system of Pine Cottage has been improved by the construction of a small building on the south side of the Cottage, which contains the heaters and boilers previously located in the Cottage itself. This has eliminated a good deal of unnecessary dust and smoke from the Cottage, and we are also able to provide better heat.

Although we have constructed no new cottages during the year, we feel the advisability of building one or two small houses for employes and their families, so that the men may live on the grounds and, in consequence, be available at all times.

Our dairy equipment, as described in the last report, is modern in every detail, and a high degree of sanitation is maintained. The milk house is so constructed that when the milk is brought from the dairy barn to the milk house it is received in a small vestibule, where it is weighed and poured into a square tank. A pipe leading from this tank extends through the wall into the milk house proper. Here it is delivered into the cooler, and then directly into the milk can. By this arrangement the boys who do the milking do not enter the room where the milk is handled. The milk house is equipped with a new separator, a large mixing can, washing tank and sterilizer.

We are now paying special attention to the fly problem, in anticipation of next summer. The cement walk from the cow barn to the milk house is being enclosed, and electric sprayers have been installed, by means of which the cows will be sprayed twice a day with insecticides. Special Insectocutor screens were installed, for test purposes, in four doors and two windows. These were in use long enough last summer to constitute a fair trial, and demonstrated their usefulness. In the short time that these electrified screens were in operation, millions of flies were electrocuted. With all of these protective measures, we feel that flies will constitute no special problem in the future.

A sweet potato house was completed in time for the storing of this year's crop. The building measures 24 by 50 feet, with a cellar under the entire building which, in addition to the first floor, is used for the storage of sweet potatoes. There is

also a good-sized room under the gambrel roof of the building, in which we shall store seeds, such as corn, beans, etc. This room is heated by the same hot water heater which will be used to heat the sweet potato beds during the spring months.

We are erecting a water tank, which is supported on a derrick 60 feet high, and holds slightly more than fifty thousand gallons. This will be a great asset, particularly from the standpoint of fire protection, since it will considerably increase our water pressure.

We are also working on the irrigation project mentioned in last year's report. The twelve acres of land which lie east of our barn buildings have been sown to alfalfa, and the ditch lines made. A building has been constructed to contain the electrical apparatus, and the entire project, including penstock and raceway, will probably be completed by the first of the year.

However, we do not expect to be able to use this plant before March, and during the construction work it will be necessary to drain the lake. This seems an exceptional opportunity to clear the lake floor of any residue of brush or trees, and it is suggested that this be done.

Miscellaneous

The County has taken over Hance Bridge road, making it into a fifty-foot road, with a gravel surface. We have brushed and plowed most of the twenty acres of land which border on this road, and hope to have it all cleared by the first of the year. Also, it is probable that the County will rebuild Palermo Avenue, which leads into the Colony, giving it a width of fifty feet.

We have changed the location of our baseball field, and have planted a number of trees around it, as well as in other parts of the grounds.

Two new trucks have been purchased, one a 2-ton G. M. C. truck, and the other a 1-ton Ford truck, used principally for the delivery of milk.

Last, but not least, two new radios have been installed in the cottages, and are proving an unfailing source of pleasure to the boys.